

### **REMARKS**

This paper is presented in response to the final official action dated August 18, 2008, and is accompanied by a Request for Continued Examination. Claims 62-77 are now pending.

#### **Claim Rejections Under 35 USC § 112, ¶1**

Claims 32, 33, 43, and 49-61 were rejected under 35 USC § 112, ¶1, as failing to comply with the written description requirement. The official action alleges that the claims contained subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention. In particular, the official action stated that the specification,

lacks support for a ceramic material (i.e. sintered material) having two different phases. Applicants argue the specification, page 10, lines 10-16 provides support for this limitation. Firstly, 'two different phases' is not considered to be equivalent to two different grain sizes in the sintered body. The limitation 'two different phases' is considered to encompass a sintered body including two phases having a different composition which is not supported by the instant disclosure. Secondly, page 10 is referencing the starting material, nowhere in the specification or examples can support for a sintered body having different grain sizes be found.

The claims have been amended. Claim 62 now recites a "ceramic, having a bimodal particle size distribution, whereby a first phase comprises a metal oxide having an average particle size of at least 250 nm, and a second phase comprises a metal oxide having an average particle size in a range of 25 nm to 250 nm...." It is respectfully submitted that the amended claims are supported by the original specification.

The fundamental factual inquiry for compliance with the written description requirement is "whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed." MPEP 2163.02 (citation omitted). "An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. . . . Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was 'ready for patenting' such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show

that the applicant was in possession of the claimed invention.” *Id.* (citations omitted). Furthermore, “[a] description as filed is presumed to be adequate.” MPEP 2163.04 (citation omitted).

Claim 62 recites a “ceramic, having a bimodal particle size distribution, whereby a first phase comprises a metal oxide having an average particle size of at least 250 nm, and a second phase comprises a metal oxide having an average particle size in a range of 25 nm to 250 nm.”

On page 10, lines 10 to 16, of the filed description, it is explicitly and clearly stated that: “The ceramics that can be made from the bimodal metal oxide powders according to the invention generally have a bimodal particle size distribution, whereby (1) a first phase comprises a metal oxide having an average particle size of at least 250 nm; and (2) a second phase comprises a metal oxide having an average particle size of 25 nm to 250 nm.” See also page 10, lines 1-2: “[a]nother subject matter of the invention is a ceramic with bimodal particle distribution that can be made from a bimodal metal oxide powder....”

Furthermore, the disclosure on page 7, lines 9 to 11, clearly discloses that “[i]t is possible to make the first metal oxide powder out of a different metal oxide than the second nanoscale metal oxide powder.”

There is no reasonable basis for an interpretation, such as that advanced by the previous official action, which views the description at page 10, lines 10-16 as not being one of the ceramic itself, but rather describing the starting material. The description explicitly states that the ceramics have a bimodal particle size distribution, with the phases described. The phrase “that can be made from the bimodal metal oxide powders according to the invention” specifies the ceramics which are being described – i.e., those made by the bimodal metal oxide powders described in the specification.

While “[t]he subject matter of a claim need not be described literally” (MPEP 2163.02), in the present case the limitation at issue is described literally. If the rejection of the amended claims is maintained, then the applicants respectfully request an explanation of why, in the view of the Office, the person of ordinary skill in the art would ignore the actual wording of the description or interpret it contrary to its literal meaning.

Reconsideration and withdrawal of the rejections are respectfully requested.

**Claim Objection and Claim Rejection Under 35 USC § 112, ¶2**

Claim 54 was objected to for informalities and rejected under 35 USC § 112, ¶2, as indefinite. The deficiencies have been corrected in the amended claim set. The objection and rejection can be withdrawn.

**Claim Rejections 35 USC § 102 and 103**

Claims 32, 33, 43, and 49-61 were rejected under 35 USC § 102(a), 102(b) or 102(e) as anticipated or in the alternative under 35 USC § 103(a) as obvious over various references, for the reasons made of record in the prior official action (January 23, 2008).

The claims have been amended. Independent claim 62 now recites "a ceramic, having a bimodal particle size distribution, whereby a first phase comprises a metal oxide having an average particle size of at least 250 nm, and a second phase comprises a metal oxide having an average particle size in a range of 25 nm to 250 nm...." None of the references cited disclose such a ceramic, either explicitly or inherently, and none teaches how to make such a ceramic. For example, the prior official action (January 23, 2008) acknowledged that none of the references disclose the bimodal powders recited in the claims.

The Office's Response to the arguments submitted with the last amendment (June 23, 2008) stated that the prior claims did not set forth two different grain sizes for the ceramic. The amended claims, as described above, now recite grain sizes for each of the phases in the ceramic.

The Office's Response to the arguments submitted with the last amendment (June 23, 2008) also stated that "[a]ll the references teach average grain sizes which would include grains of more than one size and would meet the limitation of 'different phases [grain sizes]' of the claim." The claims as amended do not only require two different phases with two different grain sizes/particle sizes but actually a bimodal particle size distribution for the ceramic. This means that even if a ceramic is produced with a metal oxide powder having a monomodal size distribution and a given *average* particle size, but actually comprising different particle sizes which may lead to at least two different grain sizes, this ceramic will not feature a bimodal particle size distribution according to the present invention and will accordingly not meet the limitations of the claims.

None of the ceramics cited by the Office comprise a bimodal size distribution of grains and specific particle size/grain size ranges for each phase of the ceramic, as presently claimed. Accordingly, the claims are novel in accordance with 35 USC § 102.

Furthermore, none of the documents provides any reason for altering their teachings to arrive at the claimed invention. There is no suggestion in the prior art that the combination of features now recited in the claims may be useful and/or desired. Accordingly, the claimed ceramics are non-obvious in accordance with 35 USC § 103.

The arguments provided in the last amendment regarding the unexpected, superior characteristics attributed to the claimed compositions and description of Example 3 and comparative Example 1 are not repeated herein, but are incorporated by reference.

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, the examiner is urged to telephone the undersigned attorney at the indicated number.

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Respectfully submitted,

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